

arms 40 focus on the waveguide. The effect of these two fields is to generate a magnetostrictive strain wave just below the magnets producing a signal which ripples back down the waveguide to a receiver in the transducer 59. This mechanical pulse is converted into an electrical signal. The high-speed clock or an integrator measures the time between launching the current pulse and arrival of the torsional wave. Since the velocity of the torsion pulse is known as a material integrator, the distance will be known. The accuracy of the device to know the position of the guide arm 40 has a resolution of 2.5 μm (0.0001 inch).

Furthermore an automatic positioning system can be used to monitor the movement of the edge of the web 44. A camera 66 is used to determine the edge of the web 44 and as result, a signal is sent to the control box 13 to automatically move all the guide arm 40 to maintain their relative position to the edge of the moving web 44.

Having described the invention with reference to accompanying illustrations of the apparatus of the present invention,

it is contemplated that engineering changes can be made without departing from the spirit or scope of the invention as set forth in the appended claims.

CLAIMS

We claim:

1. An apparatus for the positioning of a dispenser for laminating an endless ribbon in relationship to a moving web, said apparatus comprising a frame extending transversally of the path of said web, guide pulleys for the ribbon supported from the frame, characterised by the feature that said frame supports a lead screw, locking assembly comprising a free nut on said lead screw thus moving said locking assembly along said lead screw, guide rail means supported by said frame and positioned parallel to the path of said lead screw, locking assembly means for supporting a guide arm having said guide pulleys for dispensing a said ribbon, said guide arm having means for supporting the guide arm on said guide rail means, said guide arm fixed to said locking assembly, releasable locking means for locking

said guide arm to said frame for holding the guide arm and thus the locking assembly in position on said guide rail means, means for releasing said locking means and for locking said locking assembly to said lead screw by stopping the rotation of the free nut on the said lead screw when the said lead screw is rotating means for movement therewith along said frame and guide rail means, measuring system positioned near the edge of said web for means of detecting the edge of said web, said measuring system assuring that said guide arms are maintaining their relative position to said edge of said web, and said apparatus extending beyond said edge of said web means to thread up said endless ribbon to said guide arm.

2. An apparatus according to claim 1, characterised in that said releasable locking means includes a pneumatic cylinder with a bumper which is pressed against said frame.

3. An apparatus according to claim 1 characterised in that said means for connecting said locking assembly to said lead screw means comprises a cylinder

making a connection to lock locking assembly to free nut on said lead screw to move said locking assembly and so said guide arm upon rotation of said lead screw along said path

4. An apparatus according to claim 1 characterised in that said guide arm comprises a frame having a bearing supported on said rail means, cylinder supported on said frame to form said releasable locking means, and a cylinder to lock said locking assembly to free nut on said lead screw for movement of the guide arm with said lead screw means.

5. An apparatus according to claim 1 or claim 4 characterised in that said frame comprises means for rotating said lead screw.

6. An apparatus according to claim 1 or 4 characterised in that said frame comprises a non-contact transducer extending along said frame, and said guide arm comprises a permanent floating magnet positioned adjacent said transducer to serve as a signal generator when an electric field is formed in said transducer.

7. An apparatus according to claim 1, characterised in that said means for dispensing a said ribbon from said guide arm includes a bracket supporting a plurality of pulleys to guide a said ribbon from a supply to a position juxtaposed to said moving web.

8. An apparatus for use in the positioning of a dispenser for laminating an endless ribbon in relationship to a moving web in the desired position transversely of the direction of movement of said web according to claim 1 characterised in that said apparatus comprises remote means for use in identifying the position of a said guide arm and for releasing said locking means and actuating said drive means for moving a guide arm from one position along said rail means to another desired position.

9. An apparatus according to claim 8 characterised in that said remote means comprises a non-contact transducer extending along the frame and an electronic head for sending a current pulse along said transducer, and a floating magnet on said guide arm

located adjacent said transducer for generating a signal in said head upon a said current reaching said magnet.

10. An apparatus according to claim 8 characterised in that said means for driving lead screw comprises an electric motor.

11. An apparatus according to claim 8, characterised in that said releasable locking means includes a pneumatic cylinder with a bumper which is pressed against said frame.

12. An apparatus according to claim 11 characterised in that said means for connecting said guide arm to said lead screw comprises a cylinder locking said locking assembly to free nut on said lead screw means to move guide arm upon rotation of said lead screw means along said path.

13. An apparatus according to claim 8 wherein said guide arm comprises a bracket having a bearing supported on said rail means, a cylinder supported by said bracket to form said releasable locking means, and a cylinder locking

said locking assembly to free nut on said lead screw means for movement of the guide arm with said rotation of lead screw.

14. An apparatus according to claim 1 or 4 characterised by the feature that said releasable locking means for locking guide arm to said frame for holding the guide arm in position on said guide rail means, and means for releasing said locking means and for locking said locking assembly and thus said guide arm to free nut on said lead screw means for movement therewith along said frame and guide rail means are controlled remotely of said frame to position the guide arm as desired.

15. An apparatus according to claim 1 or 14 characterised in that a plurality of guide arms are positioned along said frame.

16. An apparatus according to claim 1 or 8 characterised in that electronic controls are used to identify the position of the guide arm along the frame and to operate said releasable locking means for locking said guide arm to said frame

for holding the guide arm in position on said guide rail means and to operate said means for releasing said locking means and for locking said locking assembly and thus said guide arm to free nut on said lead screw means.

17. An apparatus according to claim 1 or 8 characterised in that an electronic sensor is used to monitor the edge of the moving web and adjust the relative position of the guide arms to maintain their relative position to said edge of said moving web.

18. An apparatus according to claim 1 or 8 characterised in that the frame extends outside the edge of the moving web, permitting the movement of the guide arms outside the moving web of the laminator on the operator side, so the said guide arms can be thread up with the endless ribbon without stopping the said laminator.